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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/786,864

02/24/2004

Hiroshi Miyanari

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MORGAN & FINNEGAN, L.L.P.
3 WORLD FINANCIAL CENTER
NEW YORK, NY 10281-2101

EXAMINER

KHAN, USMAN A

ART UNIT

PAPER NUMBER

2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/786,864		MIYANARI ET AL.	
	Examiner		Art Unit	
	Usman Khan		2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 11/08/2004 has been considered by the examiner. The submission is in compliance with the provisions of 37 CFR 1.97.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7 - 8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 7 - 8 define a program and storage medium, respectively. However, the claims do not define a computer-readable

medium and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed program and storage medium respectively can range from paper on which the program and storage medium respectively is written, to a program simply contemplated and memorized by a person.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 - 3 and 5 - 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohashi et al. (US patent No 6,642,960).

Regarding 1, Kohashi et al. teaches an image sensing apparatus (abstract and column 2 lines 5 *et seq.*) comprising: a plurality of pixels (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels); a first calculating portion which creates correction data by performing computation using signals which are acquired by image sensing in an unexposed state (figure 4A item 21-1 and column 13

lines 4 *et seq.*) and smaller in number than said plurality of pixels (column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel); and a second calculating portion which corrects image data of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data (figure 2 items 31-1 *et seq.* and column 13 lines 62 *et seq.*).

Regarding **claim 2**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that said first calculating portion changes the number of signals to be used-for creation of correction data in accordance with a sensitivity condition set at the time of image sensing (figure 9A – 9K; also column 14 lines 59 *et seq.* the pattern changes on an edge condition resulting in a varying signal used for correction).

Regarding **claim 3**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that the said plurality of pixels are arrayed in the horizontal direction and the vertical direction (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels; also figures 1, 2, 7, 9, 10, 12, 16, 18-22, and 24-47), and said first calculating portion creates the correction data by vertically mixing signals (column 13 line 62 – column 14 line 12; vertical direction pixel interpolating) from pixels which are smaller in number than said plurality of pixels and arrayed in the horizontal direction and the vertical direction (column 13 line 62 – column 14 line 12 region surrounding a fault

pixel; and column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel).

Regarding **claim 5**, as mentioned above in the discussion of claim 1, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, it is inherent that the first calculation portion will operate in accordance with when the image sensing apparatus is powered on via a power switch.

Regarding **6**, Kohashi et al. teaches a control method for an image sensing apparatus (abstract and column 2 lines 5 *et seq.*) having a plurality of pixels (column 2 lines 14 – 34, image pickup device composed of two-dimensionally arrayed pixels); comprising: a first calculating step which creates correction data by performing computation using signals which are acquired by image sensing in an unexposed state (figure 4A item 21-1 and column 13 lines 4 *et seq.*) and smaller in number than said plurality of pixels (column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel); and a second calculating step which corrects image data of said plurality of pixels, acquired by image sensing in an exposed state, by using the correction data (figure 2 items 31-1 *et seq.* and column 13 lines 62 *et seq.*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohashi et al. (US patent No 6,642,960) in further view of Hamasaki (US patent No 5,335,008).

Regarding **claim 4**, as mentioned above in the discussion of claim 3, Kohashi et al. teaches all of the limitations of the parent claim. Additionally, Kohashi et al. teaches that said first calculating portion creates the correction data by vertically mixing signals from pixels (column 13 line 62 – column 14 line 12; vertical direction pixel interpolating), which are smaller in number than said plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers (column 13 line 62 – column 14 line 12 region surrounding a fault pixel; and column 12 lines 13 *et seq.* and column 13 lines 51 *et seq.*, region surrounding a fault pixel).

However, Kohashi et al. fails to disclose an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers. Hamasaki, on the other hand discloses an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers.

More specifically, Hamasaki discloses an amplifier for each array of pixels arrayed and plurality of pixels and arrayed in the horizontal direction and the vertical direction, through the corresponding amplifiers (column 2 lines 30 – 41).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Hamasaki with the

teachings of Kohashi et al. so that the fluctuation of a threshold voltage of a load MOS transistor connected to the vertical signal line can be reduced so that an aperture ratio can be increased as the vertical signal line is reduced in thickness as taught in column 2 lines 24 – 29 of Hamasaki.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tabei et al. (US patent No. 5,805,216) teaches boundary detection and defective pixel correction.

Pourjavid (US patent No. 6,529,622) teaches defective pixel correction.

Yamagishi (US patent No. 6,710,808) teaches defective pixel correction.

Miller (US PgPub 2002/0085667) teaches defective pixel correction.


Lee (US PgPub 2002/0097446) teaches defective pixel correction.

Harada (US PgPub 2002/0015111) teaches defective pixel correction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Usman Khan
03/30/2007
Patent Examiner
Art Unit 2622



DAVID OMETZ
SUPERVISORY PATENT EXAMINER